

NOTE ICTHYOLOGIQUE

FIRST RECORD OF *BERYX SPLENDENS* (OSTEICHTHYES, BERYCIDAE) IN THE MEDITERRANEAN. L. ORSI RELINI, G. PALANDRI and F. GARIBALDI, Istituto di Zoologia, Laboratori di Biologia Marina ed Ecologia Animale, Università di Genova, via Balbi 5, 16126 Genova, and P.F. GAVAGNIN, Laboratorio di Biologia Marina "L. Rampi", Portosole Sanremo, via del Castillo, 18038 Sanremo, ITALY.

RÉSUMÉ. - La présence de *Beryx splendens* dans les eaux de la Méditerranée est signalée suite à la capture d'un exemplaire par un chalutier, à environ 635 m de profondeur dans le Golfe de Gênes.

Key-words. - Berycidae, *Beryx splendens*, MED, Ligurian Sea, First Record.

Fishes of the *Beryx* genus are to be found in all oceans, especially in the band of warm and temperate waters; they are generally associated with the deep areas of the slope or with seamounts. In many regions they constitute valued resources, for example, in the Bay of Biscay (Bougis, 1945), Madeira (Maul, 1986), the Caribbean (de Leon and Malkov, 1979), the seamounts of the North Pacific (Uchida and Tagami, 1984; Seki and Tagami, 1986), the Hawaiian Islands (Humphreys *et al.*, 1984), New Zealand (Massey and Horn, 1990) and the Indian Ocean (Ivanin, 1989). On rare occasions, however, they venture to more northerly latitudes, giving rise to occasional records (Brandes *et al.*, 1954; Willgoos, 1956; Scattergood, 1958).

Up to now only one species has been reported in the Mediterranean, with rare occasional records. A specimen of *Beryx decadactylus* was indeed caught off Nice in July 1885 and bought by Giglioli for the La Specola Museum in Florence (Moreau, 1891; Bellotti, 1891); a second specimen of the same species was caught off Camogli in 1899 and acquired by the Genoa Museum (Ariola, 1904). This specimen is the only one recognized by Tortonese (1970) as being definitely caught in the Italian waters, perhaps because the two other individuals belonging to the Specola collection, and marked as coming from Catania and Vada, were bought at fish markets.

As far as we know, there are no other documented catches for the Mediterranean.

We now describe the catching of a specimen of *Beryx splendens* Lowe, 1834 in the Gulf of Genoa, which may be added to the Mediterranean collections. Quite recently we ourselves recorded the presence of this species in the Ligurian Sea, but only on the basis of some photographs. In fact the first specimen caught in the Ligurian Sea was a large fish (4 kg in weight with an estimated fork length of 55 cm) which has not been preserved. This fish was caught using a deep long-line, at about 1000 m on the slope off Cagnes-sur-mer (Côte d'Azur) and was bought by a restaurant owner. He had the fish photographed by a professional photographer, and the excellent quality of the pictures made it possible to diagnose the species (Gavagnin *et al.*, 1992).

Examined material

Beryx splendens, TL 37.5 cm, caught on 15 April 93 using a trawl net at a depth of 630-640 m about 10 miles from Portofino (Eastern Riviera). This fish is preserved in our laboratory and will be transferred to the MSNG (Museo di Storia Naturale di Genova).

Beryx splendens. - MSNG, c.e. 43317, TL 36 cm, Mauritania, 1972. - MSNG, c.e. 38499, TL 23.5 cm, La Rochelle, 1961.

Beryx decadactylus. - MSNG, c.e. 13648, caught at Camogli in 1899, TL 57 cm (Ariola, 1904). - MSNG, c.e. 38499, FL 22 cm, La Rochelle, 1961. - MZUF (Museo Zoologico dell'Università di Firenze) 5893, TL 63.5 cm, Nizza 1885. - MZUF 5895, TL 50 cm, Vada 1907. - MZUF 5894, TL 53 cm, Catania 1908.

The main biometric and meristic characteristics of the specimen found at Portofino (Fig. 1) are summarized in table I.

Discussion

At present two species, *Beryx decadactylus* and *B. splendens*, are recognised as belonging to the *Beryx* genus (Heemstra, 1986). Other species described on the basis of the persistence of larval characteristics, such as some particularly long anal fin rays (Roule, 1924; Abe, 1959; Busakhin, 1982) have been made synonymous with those cited. The distinction between the two valid species, besides being indicated by the altogether rounder form in *B. decadactylus* and longer form in *B. splendens*, is based on a series of meristic characteristics (Woods and Sonoda, 1973) among



Fig. 1. - *Beryx splendens*, 31.5 cm FL, Ligurian Sea.

Table I. - *Beryx splendens* of the Ligurian Sea, biometric (cm) and meristic characteristics.

Total length	37.5	Eye (hor.; vert.)	3.5; 4	Dorsal fin rays	IV + 16
Standard length	30	Interorbital	2.2	Pectoral fin rays	18
Fork length	31.5	Upper jaw	5	Ventralfin rays	I + 12
Predorsal length	12.5	Pectoral fin, length	7	Caudal fin rays	V + 10 + 9 + V
Prepectoral length	9.5	Ventral fin, length	6	Anal fin rays	III + 28
Preventral length	11	Caudal fin, length (upper lobe)	9	Lateral line scales	77
Head length	9.5	Body depth, at opercular margin	10	Between 1.1 and dorsal fin	9
Snout length	2	Body depth, at dorsal fin	10.5	Between 1.1 and anal fin	19

which the number of dorsal rays in particular represents an important distinguishing element even in post-larval phases (Mundy, 1990).

The meristic characteristics of this individual (i.e., D 4+16; P 18; V 1+12; A 3+28; C 5+10+9+5; LL 77) agree closely with those indicated by Wood and Sonoda (1973) for 7 individuals of *B. splendens* in the Atlantic (Gulf of Mexico, North Atlantic, Madeira), i.e; dorsal IV, 14 (13 in one, 15 in one); anal IV, 26-29 (26 in one, 27 in two, 28 in one, 29 in 4); caudal V,i,9-8,i,V; pectoral 17 or 18 (17/17 in four, 17/18 in one, 18/18 in three); ventral I,11 in six, I,12 in one; while on the basis of 10 specimens found in the Western and Eastern Atlantic, Woods and Sonoda (1973) indicate the following characteristics for *B. decadactylus*: dorsal IV (III in one) 18 (16 in one, 17 in one); anal IV, 25 in one, 26 in one, 27 in three, 28 in four; caudal IV,ii,9-8,ii,III; pectoral 16/16 (15/16 in two, 16/17 in one); ventral I,10.

It is possible to attempt to assign an age to the two specimens thus far obtained from the Mediterranean, since von Bertalanffy growth functions are available for the Atlantic (De Leon and Malkov, 1979), New Zealand (Massey and

Horn, 1990) and Japanese materials (Ikenouye, 1969; Masuzawa *et al.*, 1975). These curves are only slightly different. On the basis of the first growth curve, the specimen which is the subject of this paper could have an age ranging between 5 and 7 years, while the length of the larger fish of Cagnes sur mer is beyond the L_{∞} , indicating a very old age.

The presence of this fish on a trawlable bottom of the Eastern Ligurian Riviera appears completely accidental because bathyal trawl fishing has been regularly conducted in this area for the past 50 years and this fish is unknown to professional fishermen. In the case of both individuals one can conjecture the sporadic transport of larvae across the Strait of Gibraltar or the arrival of adults from the Atlantic. Nevertheless, the hard substrata to be found at great depths in the Ligurian Sea are very little known and it cannot be excluded that a certain population of Beryciformes has become established there permanently. It must be remembered that fishing with hooks (long-line, "filaccioni") at extreme depths is much less common than meso-bathyal trawl fishing.

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